

इंटरनेट

मानक

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“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

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“Step Out From the Old to the New”

IS 15300 (2002): Tools for Pressing - Punches -
Nomenclature and Terminology [PGD 4: Metal Forming
Machines]



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“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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भारतीय मानक
दाबन के औजार—पंच—नाम पद्धति तथा परिभाषिक शब्दावली

Indian Standard
**TOOLS FOR PRESSING—PUNCHES—
NOMENCLATURE AND TERMINOLOGY**

ICS 01.040.25; 25.120.10

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BUREAU OF INDIAN STANDARDS
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NEW DELHI 110002

NATIONAL FOREWORD

This Indian Standard which is identical with ISO 8695:1987 ‘Tools for pressing — Punches— Nomenclature and terminology’ issued by the International Organization for Standardization (ISO) was adopted by the Bureau of Indian Standards on the recommendation of the Metal Forming Machines Sectional Committee and approval of the Basic and Production Engineering Division Council.

Due to increased volume of work being done on hand-operated and power-operated presses in the country had created a need for the standardization of tooling elements for use on such machines. Much of the work produced by press working tools necessitates the piercing of holes. To fulfill this need, this Indian Standard was first published in 1967 to cover the general requirements for round piercing punches up to 14.4 mm effective diameter for making round holes. In the passage of time, many changes have been introduced to suit the need of the user industries.

The text of the ISO Standard has been approved as suitable for publication as Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following:

- a) Wherever the words ‘International Standard’ appear referring to this standard, they should be read as ‘Indian Standard’.
- b) Comma (,) has been used as a decimal marker in the International Standard while in Indian Standards, the current practice is to use a point(.) as the decimal marker.
- c) Only English version of ISO Standard has been adopted as Indian Standard.

In the adopted standard, reference appears to certain International Standards for which Indian Standards also exist. The corresponding Indian Standards which are to be substituted in their place are listed below along with their degree of equivalence for the editions indicated:

<i>International Standard</i>	<i>Corresponding Indian Standard</i>	<i>Degree of Equivalence</i>
ISO 6752:1984 Round punches with 60° conical head and straight shank	IS 4296 (Part 1):2002 Tools for pressing: Part 1 Round punches with 60° conical head and straight shank	Identical
ISO 8020:1992 Punches with cylindrical head and reduced shank	IS 4296 (Part 2):2002 Tools for pressing: Part 2 Punches with cylindrical head and reduced shank	do
ISO 8021:1986 Round punches with cylindrical head and straight shank	IS 4296 (Part 3):2002 Tools for pressing: Part 3 Round punches with cylindrical head and straight shank	do

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis shall be rounded off in accordance with IS 2:1960 ‘Rules for rounding off numerical values (*revised*)’. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

Indian Standard

TOOLS FOR PRESSING—PUNCHES— NOMENCLATURE AND TERMINOLOGY

1 Scope and field of application

This International Standard establishes the nomenclature and terminology of the main types of punches, their features and dimensional characteristics.

This International Standard is intended to serve as a reference for punch users and manufacturers. The sketches given, however, are only to illustrate the terminology.

NOTE — In addition to terms used in two of the three official ISO languages (English and French), this International Standard gives the equivalent terms in the German and Italian languages in an annex; these have been included at the request of Technical Committee ISO/TC 29, and are published under the responsibility of the member bodies for Germany, F.R. (DIN) and Italy (UNI) respectively. However, only the terms given in the official languages can be considered as ISO terms.

This annex does not form an integral part of this International Standard.

2 References

ISO 6752, *Round punches with 60° conical head and straight shank.*

ISO 8020, *Punches with cylindrical head and reduced shank.*

ISO 8021, *Round punches with cylindrical head and straight shank.*

3 Definitions

3.1 punch blank: Punch with straight shank with standard dimensions and tolerances. It is intended for machining to any particular point shape.

3.2 perforating punch: Punch to produce holes. The point end is forced through the stock and a die, simultaneously producing a hole and a slug. Either the hole or the slug may be the required part.

3.3 pilot punch: Punch with a radiused nose point end which enters previously made holes of various shapes to pick up and accurately locate the stock within the die.

3.4 punch with ejector: Punch with an ejector which mechanically separates the slug from the end of the punch point to prevent the slug being pulled back out of the die cavity. The ejector components are left to the discretion of the manufacturer.

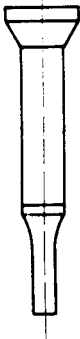
4 Punch types

4.1 Round punches with conical head

Straight shank



Reduced shank



4.2 Round punches with cylindrical head

Straight shank (blank)



Punch with ejector (blank)

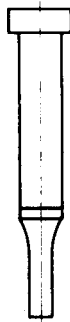


4.3 Punches with cylindrical head and reduced shank

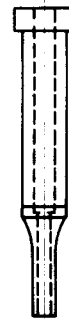
Pilot punch



Perforating punch



Perforating ejector punch



4.4 Punches to prevent turning and to provide positive location

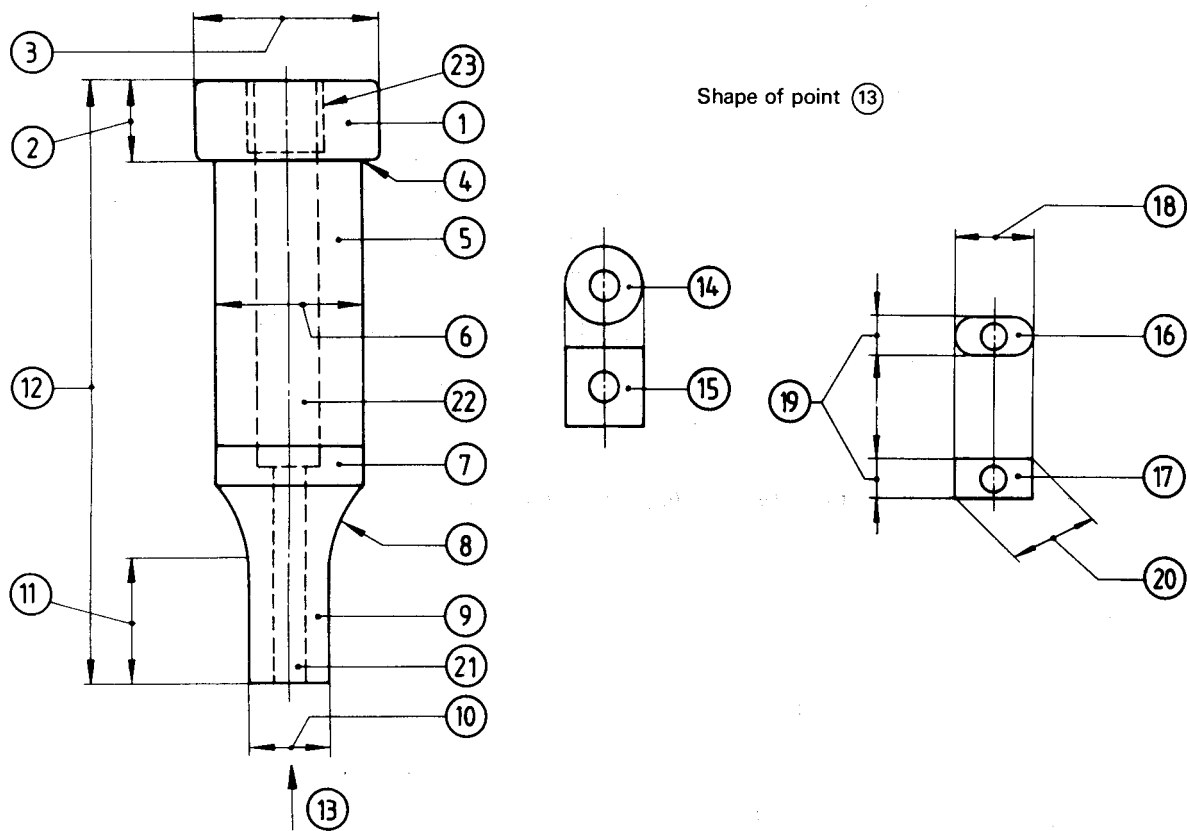


4.5 Ball-lock punches



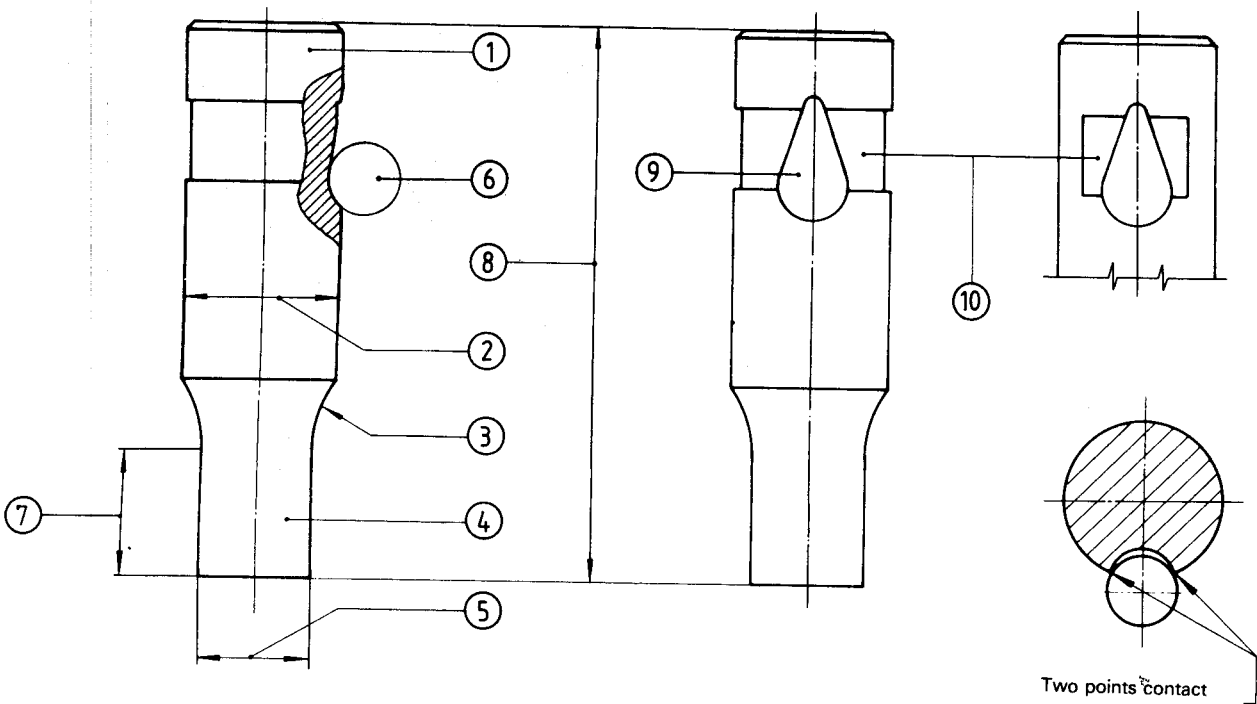
5 Terminology

5.1 Main parts of a punch



Reference No.	English
1	head
2	head thickness
3	head diameter
4	radius
5	shank
6	shank diameter
7	lead
8	radius blend
9	point
10	point diameter
11	point length
12	overall length
13	shape of point
14	round
15	square
16	oblong
17	rectangular
18	larger dimension
19	smaller dimension
20	diagonal dimension
21	hole for ejector pin
22	hole for ejector pin head
23	internal thread for retaining screw

5.2 Main parts of a ball-lock punch



Reference No.	English
1	shank
2	shank diameter
3	radius blend
4	point
5	point diameter
6	ball size
7	point length
8	overall length
9	ball seat
10	ball seat relief

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Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards: Monthly Additions'.

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Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

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